



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/099,680 | 03/15/2002 | Frank W. Rohlfing | GB 010043 | 4935 |

7590 02/04/2003

Corporate Patent Counsel
U.S. Philips Corporation
580 White Plains Road
Tarrytown, NY 10591

EXAMINER

SCHILLINGER, LAURA M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2813

DATE MAILED: 02/04/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/099,680

Applicant(s)

ROHLFING, FRANK W.

Examiner

Laura M Schillinger

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to Amendment B, dated 11/25/02 in Paper No.7.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Bae ('585).

In reference to claim 1, Bae teaches a method comprising:

- a) forming a semiconductor film over an insulating substrate (Fig.3A (50 and 53));
- b) depositing a first mask over the semiconductor film and forming holes therethrough (Fig.3B (100 and 54a));
- c) patterning the mask in a first pattern (Fig.3B (100 and 54a));
- d) depositing a second mask layer over the first (Fig. 3B (55a));
- e) patterning the second mask which lies within the area of the first (Fig.3B (55a));

f) implanting using the mask to form source/drain regions and a channel and a field-relief region having lower doping concentration than the drain region between the channel and drain (Fig.3C and Col.4, lines: 30-45).

In reference to claim 2, Bae teaches wherein step b comprises providing an array of spaced raised features over the semiconductor film, depositing a first masking layer thereover and removing the raised features when patterning the mask (Fig.3A-3B).

In reference to claim 3, Bae teaches wherein step b comprises forming an etchant mask over the first masking layer (Col.4, lines: 20-25).

In reference to claim 4, Bae teaches wherein step c is carried out before etching holes in the first masking layer (Fig.3B).

In reference to claim 5, Bae teaches wherein etching holes in the first mask occurs after step e so that holes are formed in the first mask (Fig.3B).

In reference to claim 6, Bae teaches wherein step d is carried out before step c and the method further includes step h after step d and before step c of patterning the second mask to form a masks in the first pattern for the patterning of the first masking layer in step c (Fig.3B and 3C – see 112 rejection and Fig.3E (58a)).

Art Unit: 2813

In reference to claim 7, Bae teaches wherein step h comprises defining the second pattern in the second masking layer and forming sidewall spacers adjacent to the second masking layer to define a first pattern (Fig.3E (58a)).

In reference to claim 8, Bae teaches wherein step e comprises defining the second pattern in a third masking layer over the second layer oxidizing the exposed portions of the second masking layer and removing the oxidized portions of the second layer to define a second pattern in the second masking layer (Fig. 3D (58)-3E(58a)).

In reference to claim 9, Bae teaches wherein the first masking layer forms a gate insulating layer and the second masking layer is a gate electrode (Fig.3C(54a and 55a)).

In reference to claim 10, Bae teaches wherein the first masking layer forms a gate electrode layer and the method includes a step of depositing a gate insulator layer after step a and before step b (Fig.3C (54a and 55a)).

In reference to claim 11, Bae teaches the device as a result of claim 1 (linking claim-automatically rejected with claim 1.)

Response to Arguments

Applicant's arguments filed 11/25/02 have been fully considered but they are not persuasive. Applicant argues that holes in the mask layer are not formed by Bae however,

Art Unit: 2813

Applicant has not stated how the formation of the holes in his mask differ from that shown by Bae. Figure 3A shows the conformal layer of the mask and shows how etching patterns the mask by forming holes on each side thus forming the stacked structure shown in Fig.3B. Applicant's arguments infer that the patterning shown in Fig.3B is inadequate to anticipate his "hole" language however this is unpersuasive because claim language is given its broadest reasonable interpretation which may consider the areas devoid of mask material as holes (subsequent pattern formation).

Applicant also argues that Bae fails to anticipate his claim language because Bae teaches an LDD and source/drain implant. This argument is not persuasive because the transitional element recited in the preamble is understood to be open-ended language. "Comprising the steps of" leaves open the inclusion of additional steps not included in the claim. A reference will anticipate such claim language as long as it includes the recited steps, however additional steps may also be included. Therefore, nothing in the claim language limits the number of possible implantation steps as Applicant argues.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

- Art Unit: 2813


the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M Schillinger whose telephone number is (703) 308-6425. The examiner can normally be reached on M-T, R-F 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W Whitehead, Jr. can be reached on (703) 308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

LMS
January 27, 2003


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800